

THE BLUE ECONOMY ROUNDTABLE - 2024

Shipping and Triple Planetary Crisis

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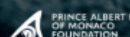
Blue Economy Round Table

Shipping and the Triple Crisis

Second Encounter March 19th and 20th 2024

monaco
ocean week

"The sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of the ocean ecosystem" World Bank.



VELUX FONDEN



PART I CONTEXT

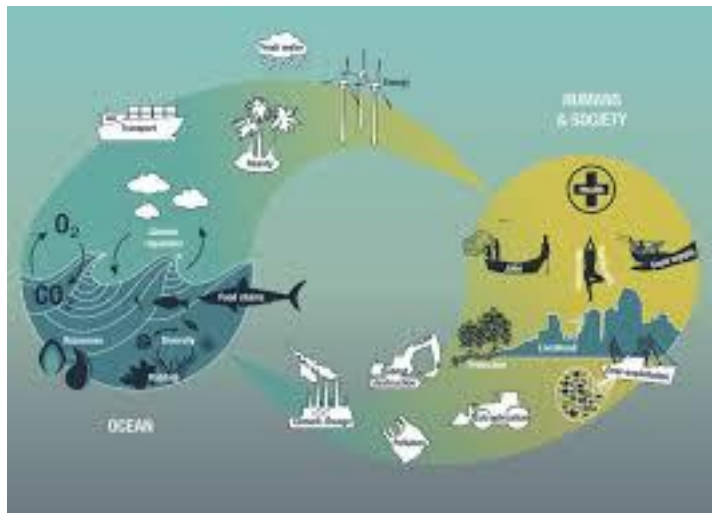
I. SUSTAINABLE OCEAN FOR SUSTAINABLE DEVELOPMENT

A. Ocean and Triple Planetary Crisis

The ocean, an essential habitat for our lives and well-being, is under unprecedented anthropogenic threat, overfishing, climate change, pollution, habitat destruction, invasive species, and other forms of human exploitation, including maritime traffic being one of the main threats affecting this ecosystem.

In the last 20 years, the ocean has become the main storage reservoir for atmospheric CO₂, capturing more than 30% of the excess CO₂ released by humans since the industrial era.

We are unequivocally facing a planetary emergency whose intersections are indisputable. In this regard, the IPCC has highlighted the interdependence of climate, ecosystems, biodiversity and humans. Recognising the importance of diverse forms of knowledge as well as the close links between adaptation, mitigation, ecosystem health, human well-being and sustainable development.



Considering the interconnectedness of actions to protect and conserve marine ecosystems, biodiversity and climate change mitigation, it is imperative to move towards a comprehensive maritime public policy that seeks to minimize the negative impacts of this industry, while recognising the fundamental services it provides to the world at large.

In this regard, various United Nations (UN) bodies and agencies have established objectives, deadlines and targets that seek to reduce the impact of maritime traffic on marine ecosystems.

1. United Nations Convention on Biological Diversity (UNCBD)

The UN Convention on Biological Diversity (UNCBD) aims to ensure that at least 30% of terrestrial, inland water, marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are conserved and effectively managed by 2030.

2. United Nations Environment Programme

The United Nations Environment Programme (UNEP) has set out measures to end plastic pollution through a redesign approach (products, packaging, shipping and systems) to create fairer opportunities.

3. Progress at COP 28

The recent COP 28 in Dubai gave birth to the "2030 Maritime Transport Pact for People and Nature (SPPaN)", which addresses the interconnected challenges between maritime traffic and the triple planetary crisis, as well as the potential benefits of decarbonization of maritime transport for people and nature.

It is widely recognized that shipping is one of the major threats to marine ecosystems. While progress on decarbonization is essential, there is still some way to go in terms of developing a comprehensive public policy on maritime traffic that takes into account all the dimensions of this issue, not only the energy dimension.

In this regard, the report Navigating the Future: Bridging Shipping, Biodiversity, and Decarbonization, the basis of the initiative embodied in the SPPaN 2030, analyzes the short- and long-term impact of maritime transport on ocean health, productivity and biodiversity, highlighting the importance of a comprehensive and coordinated approach, as well as the importance of linking actions to decarbonize maritime traffic and those developed to protect the health of the oceans.

4. International Maritime Organization

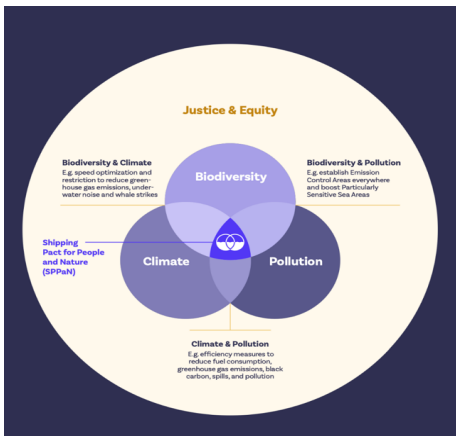
The IMO has recognized the urgency of climate action and has set targets for reducing maritime carbon emissions by 30% by 2030, 80% by 2040 and to zero by 2050, and calling for alignment with a just and equitable transition.

5. Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction

There are other international and regional regulations or instruments to which shipping should contribute, such as the BBNJ (Marine Biodiversity in Areas Beyond National Jurisdiction). It is essential to join efforts to reduce the harmful effects of shipping on marine biodiversity with the aim of achieving zero-emission shipping.

C.Impacts of maritime traffic on the ocean

Maritime transport has a significant and urgent impact on marine ecosystems, both in terms of climate and biodiversity, with Underwater Radiated Noise (URN) being one of its impacts, and discharging sewage and greywater into the global ocean, which contains bacteria, microplastics, contaminants, and pathogens.

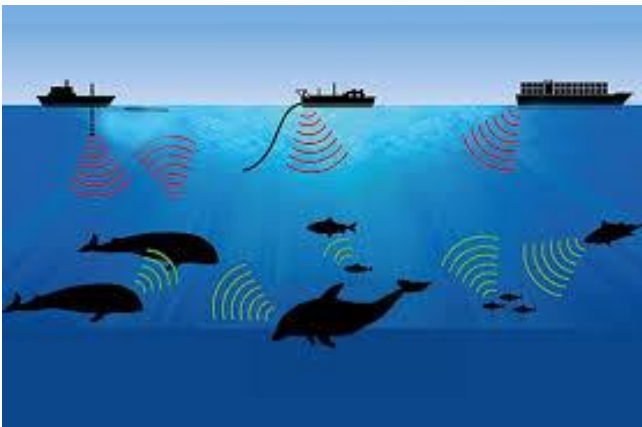


Source : Navigating the Future
 Bridging Shipping, Biodiversity, & Decarbonization.

II. SHIPPING AND BIODIVERSITY IMPACTS

A. Underwater noise (URN)

Over the last century, human activities, such as shipping, have increased along our coasts, offshore, and deep ocean environments. Noise from shipping can travel long distances underwater, leading to increases and changes in ocean noise levels in many coastal and offshore habitats. These rising noise levels can negatively impact ocean animals and ecosystems. Higher noise levels can reduce the ability of animals to communicate with potential mates, other group members, their offspring, or feeding partners. Noise can also reduce an ocean animal's ability to hear environmental cues that are vital for survival, including those keys to avoiding predators, finding food, and navigating to preferred habitats.



Reducing the speed of the world fleet can therefore lead to a reduction in both underwater noise and the risk of collision with cetaceans, as well as substantially reduce greenhouse gas (GHG) emissions and increase the likelihood of complying with international agreements in this area. Furthermore, area-based management, in the form of area-based noise targets are initial to reduce the noise impact on the marine environment. As Well as new technologies to reduce noise.

The International Maritime Organization has developed voluntary guidelines for underwater noise in 2014. There are no signs that these guidelines have had any effect and in June 2021 the IMO agreed to “commence further work on underwater noise from ships”. In January 2024, draft revised Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life were agreed by the IMO Sub-Committee on Ship Design and Construction. However, no mandatory measures have been recommended.

Requiring and encouraging speed reduction, together with increased ship efficiency, could substantially contribute to meeting the IMO's revised GHG reduction targets of 30% by 2030, while also having a significant positive impact on biodiversity.

B. Shipping waste

Shipping has become an essential mode of cargo transportation in the world and the number of global ships is also on the rise, along with the increasing marine environment pollution caused by ship waste. Main pollutants include oil pollution, air pollution, domestic sewage pollution, and garbage pollution. According to statistics, 11 % of the waste discharged to the sea is from shipping (Sherrington et al., 2016), and ship waste is a substantial part of ship-sourced pollution (To and Kato, 2017). Ship waste is produced during ship operations, navigation, and berthing, including packaging materials, plastic products, food waste, and domestic waste. The amounts and categories



of ship waste vary sharply during a voyage, so does the amount of ship waste during the shipping of different types of cargoes. Ship waste can cause great harm to the ocean. The toxic substances contained in ship waste can affect the survival of aquatic organisms and the waste itself can deteriorate water quality and intervene in the self-purification of water. In addition, some ship waste will be deposited on the seabed, changing the living conditions of aquatic organisms (Basar et

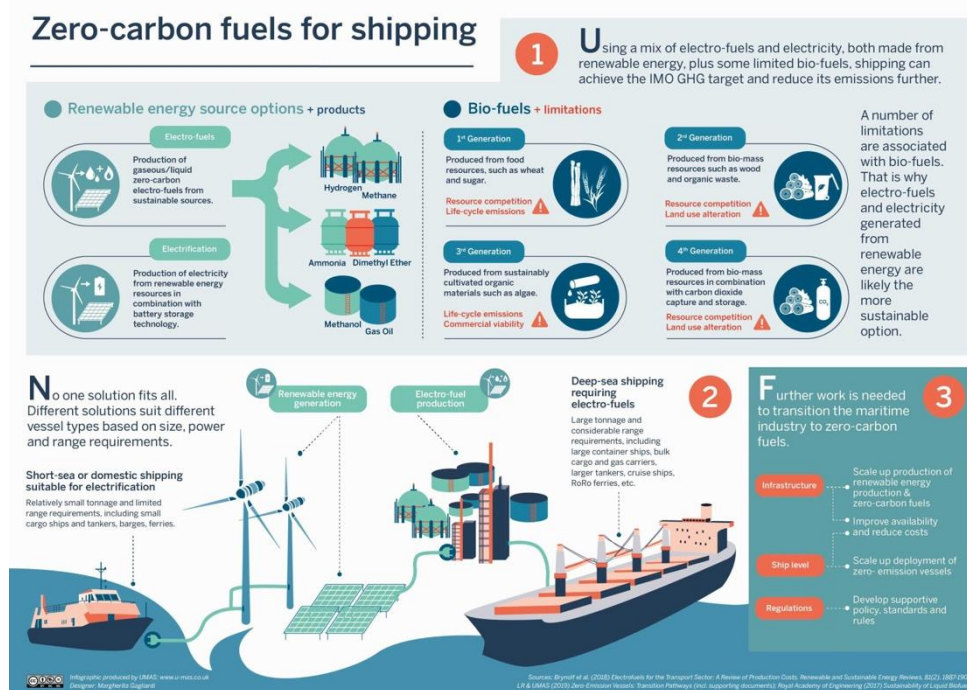
al., 2018). Plastic in ship waste is the most dangerous to marine organisms and is particularly harmful to the ocean (Alfonso et al., 2021).

Shipping waste is regulated by Annex V of The International Convention for the Prevention of Pollution from Ships (MARPOL) provides detailed regulations on the discharge of ship waste, primarily including garbage disposal outside special areas, special requirements for garbage disposal, and garbage disposal practices in special areas. Chapter 5–PREVENTION OF POLLUTION BY GARBAGE FROM SHIPS of Part II-A of the International Code for Ships Operating in Polar Waters (Polar Code) sets forth strict restrictions on the waste management of ships operating in polar waters.

IMO's Marine Environment Protection Committee (MEPC) adopted in 2021 a strategy to address marine plastic litter from ships, which sets out the ambitions to reduce marine plastic litter generated from, and retrieved by, fishing vessels; reduce shipping's contribution to marine plastic litter; and improve the effectiveness of port reception and facilities and treatment in reducing marine plastic litter.

C. Challenge of shipping decarbonisation

Global transportation is a major contributor to GHG emissions of anthropogenic origin worldwide. Maritime transport contributes to 80 to 90% of the global trade and induces an estimated emission of 1,056 million tonnes of CO₂, representing almost 3% of global CO₂ emissions, and is expected to increase with the growing demand (Lind & Lehmacher, 2022) (Wang et al., 2021). The primarily used fuel in the maritime transport sector is heavy fuel oil, which is highly viscous and contains a large load of Sulfur. As such, its use releases hazardous SO_x in high quantities in the atmosphere (Mallouppas & Yfantis, 2021). Within the shipping industry, the cruise sector is one of the worst air polluters for human and environmental health (So_x, No_x, particles...), emitting much more than cargo shipping (Koilo, 2019).



The IMO has adopted mandatory measures to reduce global GHG emissions by shipping under IMO's pollution prevention treaty – MARPOL (energy efficiency design index mandatory for new ships, and the Ship Energy Efficiency Management Plan). In alignment with the Paris Agreement, the IMO adopted a comprehensive strategy in 2018 to reduce ship-

ping-induced CO₂ emissions by 40% by 2030 and by 70% by 2050, relative to 2008 levels. As a result, the shipping market and industry consider decarbonization as a crucial part of their growth strategy for the coming decades (Mallouppas & Yfantis, 2021). In 2023, IMO increased its ambitions in its new GHG Strategy, to reach net-zero GHG emissions by or around, i.e. close to, 2050 (IMO Strategy on Reduction of GHG Emissions From Ships, 2023.). Moreover, decarbonization of the shipping industry would contribute to meeting the following five SDGs: 7- Affordable and clean energy; 8- Decent work and economic growth; 9- Industry, innovation, and infrastructure; 13 and 14 (Koilo, 2019). Nowadays, sustainability challenges and the consequent environmental regulations are a significant part of maritime logistics and supply chain management. Social aspects are a major component as air pollution causes lung cancer and heart illness within those working in the industry (Lee et al., 2019). Furthermore, as 56% of the global liquid fuel consumption is consumed by maritime transport, there is thus an urgent need to mitigate GHG emissions and the collateral impacts of oil and gas supply chain through a cleaner energy fuel transition (Alenazi et al., 2021).

III. OBJECTIVES OF THE BLUE ECONOMY ROUNDTABLE

This meeting, organized in the framework of the Monaco Ocean Week, between March 19th and 20th 2024, and co-organised by the Centre Scientifique de Monaco, the Fondation Prince Albert II of Monaco, Philanthropy Cortés Solari, through its MERI Foundation and Velux Fonden, aimed to bring together international experts in ocean public policy and science, to discuss and advance towards common minimum standards in the field of ocean conservation, particularly from the perspective of maritime traffic.

This meeting had four roundtable, that discuss the challenges faced by nations to move towards a sustainable maritime traffic, which will reduce the impact on climate, biodiversity and pollution.

The two-day workshop provided concrete recommendations linked to four dimensions:

- 1. Scientific and Environmental.*
- 2. Institutional and social.*
- 3. Economic and financial.*
- 4. Technological.*

The conclusions of these roundtables were added to those of the Malmö meeting on Maritime Transport and its Link to Climate and Biodiversity, in order to be presented to the International Maritime Organisation's Marine Environment Protection Committee (MEPC).

PART II PROPOSALS

I. MAIN PROPOSALS MADE

1. **In the absence of a UN ocean agency, it is proposed to establish a multi-disciplinary working group or task force comprising leaders from various sectors, including the UN, academia, business, finance, philanthropy, and civil society, to develop concrete responses. Particularly, a clear 5-10 points narrative to guide actions in the coming years.**

A. *This narrative should avoid duplicating the efforts of other agencies while enhancing existing initiatives in the following areas:*

- I. *Institutional framework.*
- II. *Incentives.*
- III. *Literacy/marine education.*
- IV. *Communication strategy.*

B. *The Task Force should adopt a multi-dimensional approach, recognizing that environmental phenomena intersect, and it is not prudent to isolate or confine them to the issues of noise or maritime traffic without addressing the problem comprehensively.*

C. *It is imperative for the Task Force to ensure adequate representation from both the Global North and South, as the challenges of maritime transport transcend administrative boundaries and as potential measures may affect regions in different manners / intensity. Furthermore, adopting a regional approach can create additional incentives.*



2. **The following are some aspects that should be addressed by this working group or task force:**

A. **Regulatory Structure:** *There are mandatory regulations established by various UN agencies, as well as voluntary regulations. Additionally, there are successful cases and best practices that can be replicated worldwide and integrated into public policy. It is recommended that these be taken into consideration.*

B. **Existing frameworks:** *This Task Force should prioritize the existing recommendations of the IWC (International Whaling Commission), which also has regional representation in both the North and South.*

C. **Regarding the maritime production chain:** It is crucial not only to consider maritime technological innovation and the productive sector but also to address port infrastructure and processes.

D. **Marine biological corridors:** Maritime traffic has a serious and profound impact on marine biodiversity; this has been widely studied and is linked both to collisions with species and to the consequences of noise pollution on biomass.

Growing awareness of biodiversity loss underscores the importance of adopting sustainable practices and harnessing technology to protect marine ecosystems and create or ensure the existence of marine biological corridors. In this sense, biological corridors are strategies for marine conservation and biomass recovery.

In this regard, the situation of some species has led the IMO to create Particularly Sensitive Sea Areas (PSSA) to increase precaution and awareness of the fragility of biodiversity, its protection and the safeguarding of all marine species.

It is suggested that progress be made in the creation of marine biological corridors that transcend the administrative boundaries of countries and consider the similarities of ecosystems to ensure their effective management.

E. **Certification of good maritime practices:** The roundtable proposes the creation of an international body in charge of certifying the emissions of shipping companies.

Promote an international body, composed of a Committee of Experts and duly legitimized, to regulate and grant certifications that evaluate the involvement of companies in sustainability. This body will have to be present at the local level and report to headquarters.

3. **Community awareness is a key element in promoting marine conservation, not only among the public but also among policymakers. The roundtable proposed that countries undertake to train their legislators, private sector actors and communicators in the following areas:**

A. Administrative solutions, technological solutions or synergistic measures to create a level playing field for vessel speed reduction.

B. The importance of harmonizing technological criteria for scientific buoys and other instruments for measuring the state of the oceans.

C. The importance of sharing biological and oceanographic data between stakeholders, within a country and globally.

D. Developing a formal marine education system at market level.

E. Launching campaigns with leaders, champions and ambassadors, including the maritime sector.

4. **Establish an AI system where a digital platform is created to enable administrations to access information on speed, CO₂ emissions, biodiversity, distribution, etc.** It is recommended that all biological information be shared without restrictions to truly consolidate it and establish it as the reference dataset. This will facilitate monitoring efforts to extend beyond legal boundaries.



AI appears to be considered the only technology capable of preventing collisions between ships and cetaceans, posing challenges such as the lack of a global platform consolidating cetacean data for an integrated early warning system, and the necessity of a multi-system approach incorporating acoustic data, drones, satellites, and submarines. Additionally, the discussion highlighted an AI multi-model that integrates biological data to create efficient navigation routes.

5. **Develop capabilities to simulate policy impact on multiple dimensions** (ecosystems and economy), introduce strategy gaming involving different stakeholders to simulate and test different stakeholder groups' reactions and interactions with new policies and incentives.
6. **It is proposed to develop a holistic approach, specifically IEA, to achieve good levels of management that comply with adequate governance and biodiversity protection.** In this sense, one of the recommendations is the Integrated Ecosystem Assessment, which consists of an established framework that has been adopted by UNEP, NOAA, ICES, among other organizations.



To effectively prevent ship-cetacean collisions and support sustainable shipping, AI and a holistic Integrated Ecosystem Assessment (IEA) approach are crucial. Key challenges include the lack of a global cetacean data platform and the need for a multi-system approach with various technologies. Establishing scientifically agreed indicators and utilizing interdisciplinary re-

search, scientific diplomacy, and the integration of social sciences and indigenous knowledge are essential for monitoring progress and ensuring credible, sustainable measures.

7. **The financial sector is a key actor. A proactive reward system is proposed.**

Although ESG bonuses exist today, they are still quite general. As companies become more educated and aware, sustainability standards will improve. Society is aware of the detrimental externalities of fossil fuels. However, people continue to invest due to a lack of knowledge and awareness, and as short-term, brown/harmful assets are still returning significant profits.

People are motivated when they have a positive incentive to invest.

This is about creating an opportunity to make a difference in terms of decarbonisation, understanding that there may be a trade-off in terms of cost-effectiveness.

Therefore, this Working Table suggests that countries seek to promote:

- A. *Transferability of best practice through certification to differentiate between compliant and non-compliant companies and to incentivise the adoption of positive measures.*
- B. *Launching campaigns with champions and leaders who can effectively advocate and raise awareness of maritime issues.*
- C. *Include the Superyacht sector in the analysis, involving SYBAS (Superyacht Builders Association) to encourage positive action.*

8. **Disclosure of Information:**

It is proposed that countries move towards voluntary or mandatory disclosure of the impacts of maritime transport actors (shipping industry, financial institutions and insurers) on biodiversity, natural capital, pollution (air, noise, liquid and solid waste, invasive species) and greenhouse gas emissions.

This will facilitate the certification of good practices and financial flows (social capital, equity) and access to finance on favorable terms (subsidies, guarantees).

9. **Principles**

The alignment of climate objectives in maritime finance is reflected in the Poseidon Principles, launched in 2019. They provide a global framework for financial institutions to monitor and assess whether their maritime investments are consistent with the IMO's goals. To date, 30 banks and 17 marine insurers have signed up. They will be required to calculate and disclose the carbon intensity of the ships in their portfolios. However, the Principles do not oblige shipowners to reduce their emissions; they are a reporting commitment with no obligation to reduce emissions.

It is proposed that states review these criteria to align them with the new IMO targets.

Three major changes are needed to bring the Poseidon Principles into line with the revised IMO strategy:

- I. Decarbonisation target for 2050.*
- II. Interim targets.*
- III. Taking into account the life-cycle emissions of fuels, including additional types of greenhouse gases.*

10. Science-based targets

Science-based targets call for more stringent requirements. The Blue Angel, the German sustainability standard for ships, addresses issues beyond greenhouse gas emissions, such as bilge water discharge, waste management and underwater noise. These standards aim to promote sustainability and environmental responsibility in the shipping industry.

It is therefore proposed that States move towards the following practices:

- A. Promotion of short-term hybrid solutions by modifying existing ones.*
- B. Strengthening of regulatory and supervisory bodies in the international maritime transport sector.*
- C. Prioritising regional transport logistics over long-haul global trade routes where short-haul trade routes can be established.*
- D. Substitute maritime transport for rail transport where possible.*
- E. Promote training for new jobs linked to the blue economy.*
- F. Promoting a cost-benefit analysis of the maritime sector, alongside scenario analysis, sensitivity analysis, and environmental risk assessment.*

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